COMPOSITE COLUMNAR SECTION

LITHO-TYPICAL INDUCTION-LITHOLOGIC DESCRIPTION LOGIC GAMMA-RAY LOG RESPONSE COLUMN Shale and siltstone, frequently sandy, dark blue, weathers to gray, brown, or reddish brown. 2. Sandstone, compact, brown or gray-brown, and sandy shale, locally containing thin coal seams. 3. Shale, dark to light blue, clayey, sandy near base. 4. Sandstone, gray-brown or brown, hard, and sandy shale. 5. Shale, dark gray to green, containing thin coal traces, plant or marine invertebrate fossils. Local 6. Sandstones, brown to gray-brown, hard, fossiliferous, ripplemarked, thin-bedded to massive, and sandy shale; traces of thin local coal. 7. Shale, blue to black, hard, contains coal traces; locally sandy, or limy, with shells; sandstones, buff, calcareous, thin. 8. Coal, frequently with underclay. 9. Shale, hard, blue. 10. Coal. 11. Shale, dark blue or black. 12. Coal, with underclay. Local 13. Shale, dark gray to green dark brown, silty, fissile to blocky, carbonaceous; gray clay-ironstone concretions. 14. Sandstone, gray, thin-bedded, fine-grained, with minor shale. 15. Shale, dark blue to gray, silty to clayey, containing thin local Local coai near base. 16. Sandstone, buff, silty, flaggy, alternating with thin silty shales. 17. Shale, gray to buff, silty, argillaceous. 18. Sandstones, buff, calcareous, hard, commonly ferruginous, locally contain hollow limonite concretions and plant fossils; upper sandstones thin, interbedded with shale; may contain 19. Shale, greenish to buff, argillaceous, some sandy shale. Local 20. Shale, dark gray to black, slabby, silty, containing abundant non-fossiliferous clay-ironstone concretions; contains thin local coal and thin local sandstones. 21. Coal, sometimes overlain by local sandstone. 22. Shale, black, brown, gray, fissile, carbonaceous; sandstone, brown to light gray, thin to massive. 23. Coal, with underclay. 24. Shale, black, brown, gray, fissile, sandy; sandstones, brown to light gray, thin. 25. Sandstone, brown to light gray, massive to thin-bedded, shaly; may contain local coal. 26. Shale, dark olive-gray to black, clayey to silty, contains minor amounts of hard, fine-grained, greenish-gray to greenish-black sandstones NOTE: The above lithologic descriptions were derived from core data and publications covering the area within the quadrangle. In the absence of detailed information, generalized regional descriptions were used. Meters Feet 25-125 -400

CORRELATION OF COAL BEDS IN BORE HOLES AND COMPOSITE MINE SECTIONS

